

1. Which of the following is not one of Maxwell's Equations?

- A) Gauss's Law for Electric Fields
- B) Gauss's Law for Magnetic Fields
- C) The Biot-Savart Law
- D) Faraday's Law
- E) The Ampere-Maxwell Law

2. Which of the following creates a magnetic field?

- I. Moving electric charges
- II. Stationary electric charges
- III. Time changing electric fields

- A) III only
- B) I and II only
- C) I and III only
- D) II and III only
- E) I, II, and III

3. Which of the following creates an electric field?

- I. Electric charges
- II. Time changing magnetic fields
- III. Stationary magnetic poles

- A) I only
- B) II only
- C) I and II only
- D) II and III only
- E) I, II and III

4. Which of the following causes forces on stationary electric charges?

- I. Electric fields
- II. Magnetic fields
- III. Light

- A) I only
- B) II only
- C) I and III only
- D) II and III only
- E) I, II and III

5. Magnetic fields cause forces on which of the following?

- I. Moving electric charges
- II. Stationary electric charges
- III. Magnetic poles

- A) I only
- B) II only
- C) III only
- D) I and III only
- E) I, II and III

6. Which law accounts for the fact magnetic monopoles do not exist?

- A) Gauss's Law for electricity
- B) Gauss's Law for magnetism
- C) Faraday's Law
- D) Ampere-Maxwell's Law
- E) All of the above

7. What does Faraday's law say?

- A) A changing magnetic field produces an electric field.
- B) A changing electric field produces a magnetic field.
- C) The absence of magnetic dipoles.
- D) A Gaussian surface enclosing an electric monopole has no electric flux.
- E) None of the above

8. What does Maxwell's law of induction say?

- A) A changing magnetic field produces an electric field.
- B) A changing electric field produces a magnetic field.
- C) The absence of magnetic monopoles
- D) A Gaussian surface enclosing an electric monopole has no electric flux.
- E) None of the above

9. Which of the following is not a difference between Ampere's law and Gauss's law?

- A) Ampere's law involves a line integral and Gauss's law involves a surface integral.
- B) Ampere's law involves an Amperian path and Gauss's law involves a Gaussian surface.
- C) Ampere's law involves a length differential and Gauss's law involves an area differential.
- D) Ampere's law involves electric field and Gauss's law involves magnetic field.
- E) None of the above

10. Maxwell's equations state all of the following EXCEPT

- A) the electric field is proportional to the charge enclosed by a surface
 - B) there are no magnetic monopoles
 - C) the induced EMF in a loop of wire is proportional to the rate of change of magnetic flux
 - D) a changing electric field produces a magnetic field
 - E) the magnetic flux through a closed surface is always non-zero
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Answer Key
LC Circuits MC Questions [Mar 28, 2011]

1. C
 2. C
 3. C
 4. A
 5. D
 6. B
 7. A
 8. B
 9. D
 10. E
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Name _____

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